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Applicant(s): Stefano Oggioni

Examiner: Graybill, David E.

Serial No.: 09/638,729

Art Unit: 2827

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For: **BALL GRID ARRAY MODULE**

Commissioner for Patents  
Washington, D.C. 20231

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Sir:

This paper is being filed in response to the Final Office Action mailed June 26, 2002.

Applicant respectfully request that the above-identified application be reconsidered in view of the Amendments and Remarks that follow, that each of the presently pending claims be allowed, and that the application be passed to issue.

**Amendment**

**IN THE CLAIMS:**

Please cancel claim 2. The following claims 1, 3-8 and 12 are currently pending.

1. (ONCE AMENDED) An electronic package comprising:

a metal member;

a dielectric layer positioned on said metal member, wherein  
said dielectric layer comprises a photo-imageable dielectric material;

an active element positioned on said dielectric layer;

a first plurality of electrically conductive members positioned on said dielectric  
layer relative to said active element;

a plurality of metallic traces on said dielectric layer, selected ones of said metallic  
traces in electrical contact with said active element and selected ones of said first plurality of  
electrically conductive members;

a second plurality of electrically conductive members positioned on said dielectric  
layer; and

at least one electrically conductive via in said dielectric layer, said at least one of said second  
plurality of electrically conductive members in contact with said metal member not electrically  
coupled to said metallic traces.

3. The electronic package of claim 1, wherein said dielectric layer has a thickness of from 25  
microns to 115 microns.

4. The electronic package of claim 1, wherein each of said plurality of metallic traces has a  
width of from 50 microns to 260 microns.

5. The electronic package of claim 1, wherein said second plurality of electrically conductive

members is positioned on said dielectric layer peripherally to said first plurality of electrically conductive members.

6. The electronic package of claim 1, further including a mother board positioned on said first and said second plurality of electrically conductive members, said mother board including a ground plane.

7. The electronic package of claim 6, wherein said ground plane is electrically coupled to said metal member.

8. The electronic package of claim 7, wherein said metal member comprises an electromagnetic shield for said active element.

12. The electronic package of claim 1, wherein the photo-imageable dielectric material undergoes a chemical change and polymerizes when exposed to light, so as to become non-soluble to a developer solution .

#### **REMARKS**

Claim 2 has been canceled. Claims 1, 3-8 and 12 are pending in this application based on the amendment herein.

The Examiner rejected claims 1-8 under 35 U.S.C. §103(a) as being unpatentable over the combination of Vendramin (5955789), Marrs (5583378) and Datta (6222156).

Applicant respectfully traverses the 35 U.S.C. §103 rejections with the following arguments.

**35 U.S.C. §103**

As to claim 1 the Examiner alleges that “[a]t column 1, lines 2-24 and 36-39; and column 3, line 50 to column 4, line 61, Vendramin teaches the following:

1. An electronic package comprising: a metal member 405; a dielectric layer [‘organic laminate’] positioned on said metal member, wherein said dielectric layer comprises a dielectric material; an active element 401 positioned on said dielectric layer; a first plurality of electrically conductive members 305 positioned on said dielectric layer relative to said active element; a second plurality of electrically conductive members 303 positioned on said dielectric layer; and at least one electrically conductive via 301 in said dielectric layer, said at least one of said second plurality of electrically conductive members in contact with said metal member not electrically coupled to said metallic traces.”

The Examiner alleges that “[h]owever, Vendramin does not appear to explicitly teach a plurality of metallic traces on said dielectric layer, selected ones of said metallic traces in electrical contact with said active element and selected ones of said first plurality of electrically conductive members.”

The Examiner alleges that “[n]onetheless, at column 12, lines 7-64; column 13, lines 14-45; and column 13, line 65 to column 14, line 1, Marrs teaches a plurality of metallic traces 438 on a dielectric layer 406, selected ones of the metallic traces in electrical contact with an active element 402 and selected ones of a first plurality of electrically conductive members 418.

Moreover, it would have been obvious to combine the process of Marrs with the process of Vendramin because it would provide active electrical connections.”

As to claim 1, in reference to Vendramin and Marrs, Applicant contends that it would not be obvious to combine the electrical connections of Marrs with the process of Vendramin to provide electrical connections in Applicant’s disclosure because the Vendramin invention already has electrical connections. Based on the preceding argument, Applicant respectfully maintain that claim 1 is not unpatentable over Vendramin and Marrs, and that claim 1 is in condition for allowance. Since claims 3-8 and 12 depend from claim 1, Applicant contends that claims 3-8 and 12 are likewise in condition for allowance.

The Examiner alleges that “[i]n addition, it is noted that the resulting combination of the applied prior art teaches the element positioned on the dielectric layer as disclosed in the instant Figures 4 and 4A.”

The Examiner alleges that “Vendramin also does not appear to explicitly teach the following ... The electronic package of 1, wherein said dielectric layer comprises a permanent photo-imageable dielectric material.”

The Examiner alleges that “[n]evertheless, at column 1, lines 22-39; column 2, lines 28-51; and column 3, lines 12-16, Datta teaches a process wherein a dielectric layer comprises a permanent photo-imageable dielectric material wherein the photo-imageable dielectric material inherently undergoes a chemical change and polymerizes when exposed to light, so as to become non-soluble to a developer solution. In fact, the material of Datta is the same material as that of applicant’s preferred embodiment disclosed in the instant specification at page 9, lines 1-4. Furthermore, it would have been obvious to combine the process of Datta with the process of the

applied prior art because it would provide an organic laminate.”

The Examiner alleges that “Applicant’s amendment and remarks filed 4-08-02 have been fully considered, and are addressed in the rejection supra and further addressed infra.”

The Examiner alleges that “Applicant alleges that not motivation has been provided to combine Datta and Vendramin.”

The Examiner alleges that “[t]his allegation is respectfully traversed because motivation to combine is explicitly and clearly stated in the rejection; namely, ‘it would have been obvious to combine the process of Datta with the process of the applied prior art because it would provide an organic laminate.’ To further clarify, it is well established that the selection of an art recognized element based on its suitability for its intended use supports a prima facie obviousness determination. See MPEP 2144.07, in particular, *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945); and *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious); *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 8 USPQ2d 1323 (Fed. Cir. 1988) (Claimed agricultural bagging machine, which differed from a prior art machine only in that the brake means were hydraulically operated rather than mechanically operated, was held to be obvious over the prior art machine in view of references which disclosed hydraulic brakes for performing the same function, albeit in a different environment). Therefore, to paraphrase *In re Leshin supra*, selection of the photo-imageable organic dielectric of Datta to make a dielectric layer of a type made of organic dielectric as taught by Vendramin would have been obvious.”

As to claim 1, in reference to Vendramin and Datta, Applicant respectfully maintains that

it would not be obvious to combine the Vendramin invention with the photo-imageable dielectric material used in Datta because, the primary reference, Vendramin does not suggest any reason for using a photo-imageable material. One reason that Applicant uses the photo-imageable dielectric material is to reduce the overall thickness of the dielectric material, thereby reducing the thickness of the electronic package. Reducing the thickness of the dielectric material is disclosed in the specification on page 8, lines 9-24. Applications such as PCMCIA, PDA, GPS, and GSP that require a thin electronic package are disclosed in the specification on page 5, lines 24-29 and page 6, lines 1-10. Another benefit to reducing the thickness of the dielectric material is to reduce impedance of the electronic package. Reducing the impedance of the electronic package is disclosed in the specification on page 11, lines 10-29 and page 12, lines 1-2. Vendremin, the primary reference, does not teach or suggest any reason for reducing the overall thickness of the dielectric material. Likewise Vendremin does not even discuss reducing the impedance of an electronic structure or any other design consideration that is suggestive of a need to use a photo-imageable dielectric material. Based on the preceding arguments, Applicant respectfully maintain that claim 1 is not unpatentable over Vendramin in view of Datta, and that claim 1 is in condition for allowance. Since claims 3-8 and 12 depend from claim 1, Applicant contends that claims 3-8 and 12 are likewise in condition for allowance.

Additionally, Applicant contends that Datta cannot be used as prior art in rejecting claims of the present patent application, because “[e]ffective November 29, 1999, subject matter which was prior art under former 35 U.S.C. 103 via 35 U.S.C. 102(e) is now disqualified as prior art against the claimed invention if that subject matter and the claimed invention ‘were, at the time the invention was made, owned by the same person or subject to assignment by the same

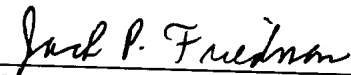
person.” MPEP 706.02(1)(1). First, the present patent was filed on October 14, 2000 which is after November 29, 1999. Second, the Datta patent is being considered by the Examiner as prior art under former 35 U.S.C. 103 via 35 U.S.C. 102(e), because the Datta patent issued on April 24, 2001 which is after the filing date of October 14, 2000 of the present patent application. Third, both the subject matter of the Datta patent and the claimed invention of the present patent application were, at the time the invention was made, owned by International Business Machines Corporation or subject to assignment by International Business Machines Corporation. Accordingly, Applicant respectfully maintains that Datta cannot be used as a prior art reference. Based on the preceding argument, Applicant respectfully maintain that claim 1 is not unpatentable over Datta because Datta cannot be used as a prior art reference, and that claim 1 is in condition for allowance. Since claims 3-8 and 12 depend from claim 1, Applicant contends that claims 3-8 and 12 are likewise in condition for allowance.



**CONCLUSION**

Based on the preceding arguments, Applicant respectfully contends claims 1, 3-8 and 12 are in condition for allowance. If the Examiner believes that anything further is necessary in order to place the application in better condition for allowance, the Examiner is requested to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

  
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